

REMARKS

The present application relates to inbred maize plant and seed PH3PG. Claims 1-30 are pending in the present application. Claims 2, 19-22, 25-28, and 30 have been amended. Claim 16 has been canceled. No new matter has been added by way of amendment. Applicants respectfully request consideration of the claims in view of the following remarks.

Detailed Action

Applicants have amended the specification to include the U.S. Patent No. of the parent application on page 1, lines 10-12 as requested by the Examiner. No new matter has been added.

Applicants further acknowledge that a proper form 1449 Information Disclosure Statement (IDS) is being submitted herein as requested by the Examiner.

Claim Objections

The Examiner states that "should claims 2 and 3 be found allowable, claims 5 and 6 will be objected to under 37 C.F.R. § 1.75 as being a substantial duplicate thereof".

Applicants respectfully traverse this objection. The scope of the claims in claims 2-3 and 5-6 are not the same. Claims 2 and 3 are to a maize plant or maize plant part from the seed having been deposited under ATCC Accession No. PTA-4260. In contrast, claims 5 and 6 are to a maize plant or maize plant part of an F1 hybrid maize seed crossed with a different maize plant. Further, Applicants assert claims 2-3 and 5-6 are in proper dependent form as taught in MPEP § 608.01(n) and 37 C.F.R. § 1.75(c). Moreover, Applicants are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claims 2-3 and 5-6, were in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicants respectfully request this objection be alleviated in light of the above statements.

Double Patenting

The Examiner rejects claims 1-6, 11-18, 23, 24, 28 and 29 under the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of copending U.S. Patent No. 6,818,811. The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each other. *See* Office Action, pp. 3-5.

Applicants are herein submitting a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c), which disclaims any term of a patent issuing from this application which would extend beyond the term of copending U.S. Patent No. 6,818,811.

The Examiner further rejects claims 19-22 and 25-27 under the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of copending U.S. Patent No. 6,818,811 in view of Larkins (U.S. Patent No. 6,232,535). The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each other. *See Office Action, pp. 5-7.*

Applicants are herein submitting a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c), which disclaims any term of a patent issuing from this application which would extend beyond the term of copending U.S. Patent No. 6,818,811 in view of Larkins (U.S. Patent No. 6,232,535).

Therefore, Applicants submit that the claims are in proper form for allowance and respectfully request reconsideration and withdrawal of the nonstatutory obviousness-type double patenting rejection.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 2, 3, 20, 22, and 28-30 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. *See Office Action, pp. 7-8.*

The Examiner states that claim 2 is indefinite in the recitation "F1 hybrid maize seed" and that "[t]here is insufficient antecedent basis for the recitation." Although not acceding to the Examiner's rejection, in an effort to reduce the issues on appeal, Applicants have now amended claim 2 to replace the article "an" with the article "the", thus alleviating this rejection.

Claim 20 is indefinite according to the Examiner for "the article 'a' in the recitation, 'the single locus was stably inserted into a maize genome by transformation'". Although not acceding to the Examiner's rejection, in an effort to reduce the issues on appeal, Applicants have now amended claim 20 to replace the article "a" with the article "the", thus alleviating this rejection.

The Examiner states that claim 22 is indefinite in the recitation "yield enhancement" and "improved nutritional quality". Applicants respectfully traverse. "Yield Advantage" is defined on page 15 of the specification as "the yield advantage of variety #1 over variety #2". Therefore

yield enhancement would be the improvement of the trait yield over another variety. Applicants assert that genes which increase yield by increasing the plants resistance to disease, herbicides, or insects are within the scope of the claims as presented. The specification teaches multiple ways of introgressing or transforming a maize plant with various genes which confer advantageous traits desired in the plant. *See* specification, pp. 21-34. The specification also teaches many transgenes that could be inserted into the plant of claim 11. *See* specification, pp. 27-32. In addition, see U.S. Patent No. 5,936,145, issued August 10, 1999, which is prior to the filing date of the instant application. Claim 39 reads as follows: "[t]he single gene conversion of the corn plant of claim 29, where the gene confers enhanced yield stability." Thus, a single gene that confers enhanced yield stability was known in the art prior to the filing date of the instant application. One of skill in the art would recognize that it is common to transform a maize plant with various genes in order to confer desired traits to the maize plant.

Similarly, "improved nutritional quality" would represent an improvement in the nutritional quality versus another variety as described on page 20 of the specification. Further, single genes that affect nutritional quality are known in the art. Specifically genes for modified fatty acids, decreased phytate content and modified carbohydrate compositions which are disclosed in the specification on pp. 31-32. Applicants respectfully submit that one skilled in the art would thus recognize that claim 22 is adequately defined.

Claim 28 is indefinite "as the preamble of the claim indicates that the method is for developing a maize plant breeding program using plant breeding techniques...the claim does not indicate when the maize plant is developed". Applicants traverse this rejection. Applicants have obtained allowance from the Supervisory Patent Examiner, Anne Marie Grunberg, regarding claim 28 as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Moreover, Applicants are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 28, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicants respectfully request this rejection be alleviated in light of the above statements.

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 112, First Paragraph

A. Written description regarding Claim 16

Claim 16 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claims(s) contains subject matter, which was not described in the specification in such a way as reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states "the claim is broadly drawn towards any maize seed produced by growing a hybrid maize plant, wherein the hybrid maize plant was produced by crossing a maize plant having all the morphological and physiological characteristics of maize plant PH3PG with a second maize plant". *See Office Action, pp. 8-9.*

Although not acceding to the Examiner's rejection, in an effort to expedite prosecution and reduce the issues upon appeal, Applicants have now canceled claim 16, thereby alleviating this rejection.

B. Written description regarding Claims 7-10, 19-22, 25 and 30

Claims 7-10, 19-22, 25 and 30 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claims(s) contains subject matter, which was not described in the specification in such a way as reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *See Office Action, pp. 9-10.*

The Examiner states that claim 7 is "drawn to an inbred maize plant cell of inbred maize line PH3PG...there is no written description support for such a seed, or plant produced therefrom, in the specification".

Applicants traverse this rejection. Applicants assert there is adequate written description in the specification for "an inbred maize plant cell" on page 21 of the specification:

As used herein, the term plant includes plant cells, plant protoplasts, plant cell tissue cultures from which maize plants can be regenerated, plant calli, plant clumps, and plant cells that are intact in plants or parts of plants, such as embryos, pollen, ovules, seeds, flowers, kernels, ears, cobs, leaves, husks, stalks, roots, root tips, anthers, silk and the like. Specification, p. 21.

Applicants assert that the use of this terminology would be well understood to one ordinarily skilled in the art. In addition, Applicants are aware that in view of a meeting with the

Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 7, were in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicants respectfully request this rejection be alleviated in light of the above statements.

The Examiner goes on to state that claim 19 lacks written description support for "single locus conversion". Although not acceding to the Examiner's rejection, in an effort to expedite prosecution, Applicants have amended claims 19-22 to read "single gene conversion", as supported in the specification on page 22, further defining the claims. Applicants further submit that the terms "single gene conversion" and "single locus conversion" are synonymous and would be well understood by one of ordinary skill in the art. Applicants respectfully submit that one skilled in the art would thus recognize that Applicants have adequately described claim 19.

The Examiner states that claim 25 "does not have support for '0-5 generations'". Applicants traverse this rejection. Applicants assert the specification provides adequate written description for the claimed language:

Pedigree breeding starts with the crossing of two genotypes, each of which may have one or more desirable characteristics that is lacking in the other or which complements the other. If the two original parents do not provide all the desired characteristics, other sources can be included in the breeding population. In the pedigree method, superior plants are selfed and selected in successive generations. In the succeeding generations the heterozygous condition gives way to homogeneous lines as a result of self-pollination and selection. Typically in the pedigree method of breeding five or more generations of selfing and selection is practiced: $F_1 \rightarrow F_2; F_2 \rightarrow F_3; F_3 \rightarrow F_4; F_4 \rightarrow F_5$, etc. Specification, p. 4.

It is also important to note that after five or more backcross generations with selection for the desired trait, the progeny will be homozygous for loci controlling the characteristic being transferred, but will be like the superior parent. *See* specification, p. 4. Applicants respectfully submit that one skilled in art would recognize that Applicants have adequately described claim 25.

Furthermore, in an effort to expedite prosecution Applicants have amended claim 25 in a manner which has obtained allowance from the Supervisory Patent Examiner, Anne Marie Grunberg, as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Moreover, Applicants are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including

claim 25, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicants respectfully request this rejection be alleviated in light of the above statements.

The Examiner further states that claims "there is no support for step (c) of claim 30.

Although not acceding to the Examiner's rejection, in an effort to expedite prosecution, Applicants have amended claim 30 in a manner which has obtained allowance from the Supervisory Patent Examiner, Anne Marie Grunberg, as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Moreover, Applicants are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 30, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Thus, Applicants respectfully request this rejection be alleviated in light of the amendment and the above statements.

One skilled in the art would thus recognize that Applicants have fully described and fully satisfied the legal standards of written description for claims 7-10, 19-22, 25 and 30 as of the filing date of the application. Accordingly, Applicants respectfully request reconsideration and withdrawal of the written description rejections under 35 U.S.C. §112, first paragraph.

C. Enablement regarding Claims 7-10

Claims 7-10 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. *See* Office Action, pp. 10-11.

The Examiner states that claim 7 is not enabled. Applicants traverse this rejection. Applicants assert that claim 7 is adequately described and further enabled as evidenced by the statements described *supra*. Further, Applicants are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 7, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicants respectfully request this rejection be alleviated in light of the above statements

Applicants further assert that dependent claims 8-10 are also adequately described and enabled. The Examiner does not provide explanation as to why these claims are not enabled. Nevertheless, Applicants maintain the arguments described *supra* also apply to dependent claims

8-10. Moreover, Applicants are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claims 8-10, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicants respectfully request this rejection be alleviated in light of the above statements.

Accordingly, Applicants submit that claims 7-10 are fully enabled and have fully satisfied the legal standards for enablement. Applicants respectfully request reconsideration and withdrawal of the enablement rejections under 35 U.S.C. § 112, first paragraph.

Rejections Under 35 U.S.C. §§ 102(b)/103(a)

Claim 16 is rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Johnson (U.S. Patent No. 5,859,355). The Examiner states that "seed may have been produced from a method different from those of the instantly claimed seed. However the instantly claimed products do not appear to differ from the products taught by the reference". *See* Office Action, pp. 11-12.

Although not acceding to the Examiner's rejection, in an effort to expedite prosecution, claim 16 has been canceled, thus alleviating this rejection. Applicants respectfully request the Examiner withdraw the rejections to claim 16 under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a) as obvious over Johnson (U.S. Patent No. 5,859,355).

Request for Information under 37 C.F.R. § 1.105

The Examiner has made a Request for Information under 37 C.F.R. § 1.105. The Examiner states the requested information is "required to make a meaningful and complete search of the prior art". *See* Office Action– Request for Information Under 37 C.F.R. § 1.105, pp. 14-16.

Applicants provide answers to each of the Examiner's interrogatories discussed *infra*.

The Examiner begins by asking firstly, what were the original parental maize lines used to produce maize inbred line PH3PG? Please supply information pertaining to the lineage of the original parental lines back to any publicly available varieties. PHKM5 and PHFA5. Information pertaining to the lineage of the original parental lines is available within the PVP No. 200000250, attached as Appendix 1.

Secondly, what method and steps were used to produce maize inbred line PH3PG?

Pedigree selection method produced by selfing for 5 generations.

Third, have any of said parental maize lines or progeny therefrom been disclosed or made publicly available?

a. The parental maize line PHKM5 was previously disclosed or made publicly available in PVP Certificate No. 9400097 and U.S. Patent No. 5,491,286. The parental maize line PHFA5 was previously disclosed or made publicly available in PVP Certificate No. 9300107 and U.S. Patent No. 5,387,755.

b. No other progeny of the parental cross PHKM5/PHFA5 was previously publicly disclosed or made publicly available by Applicants prior to the earliest priority date.

Fourth, were any other maize lines produced by said method using said original parental maize lines, and if so, have said produced maize lines been disclosed or made publicly available? If so, under what designation/denomination and under what conditions were said other maize lines disclosed or made publicly available? No other maize line using the same F1 cross has been produced by said method using said original parental maize lines at or before the time of filing of the instant application.

In light of the above remarks, Applicants respectfully request reconsideration and compliance with the interrogatories under the Request for Information under 37 C.F.R. § 1.105.

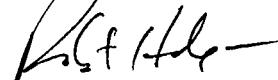
Conclusion

In conclusion, Applicants submit in light of the above amendments and remarks, the claims as amended are in a condition for allowance, and reconsideration is respectfully requested. If it is felt that it would aid in prosecution, the Examiner is invited to contact the undersigned at the number indicated to discuss any outstanding issues.

Please consider this a two month extension of time from December 6, 2006 to February 6, 2007, under the provision of 37 C.F.R. § 1.136(a) and charge Deposit Account No. 26-0084 for the amount of \$450.00. No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any fees inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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